



PERIYAR UNIVERSITY
(NAAC 'A' Grade- State University- NIRF Rank 68)
SALEM – 636 011
DEPARTMENT OF BIOCHEMISTRY

Value Added course: Plant Therapeutics (19BCHVA01)

Course mentor: Dr. M. SURIYAVATHANA

Introduction:

The course is offered by the department of Biochemistry in order to understand the immense uses of medicinal plants in the areas of clinical manifestation, food and nutrition and also commercial utility in cosmetics etc. Moreover, this course create an complete realization plant based commodities which are serving as natural products commercial utility in various process such as selection, extraction, purification, and characterization of their pharmacologically valuable secondary metabolites. The phytocompounds are prime source for various drug discovery and formulations in AYURVEDA, SIDDHA, UNNANI AND HOMEOPATHY, the Indian traditional system of medicine. By undertaking this paper the students certainly will be empowered with knowledge based life skill process to value and cultivate the plants for life.

Course outcome:

CO1 : Acquire a basic knowledge on the medicinal and their taxonomy and classification.

CO2 : To study the importance of the secondary metabolites and their commercial significance.

CO3 : To understand the basics of the characterization of secondary metabolites.

CO4 : Focused to clinical diagnosis and treatment for various diseases.

CO5: It emphasizes the significance of antioxidants in therapeutic approach.

Syllabus

Unit-I: Classification, Metabolism, Distribution, Significance, Economic importance of secondary metabolism of medicinal plants.

Unit-II: Secondary metabolites: definition, types (alkaloids, steroids, glycosides and flavonoids). secondary metabolites as plant therapeutics, economic importance of secondary products.

Unit-III: Screening of secondary metabolites–Phytochemical analysis, Biochemical methods, quantitative and qualitative analysis. Separation procedures, purification and characterization of secondary compounds.

Unit-IV: Therapeutic options for hepatic and kidney disease, inflammatory diseases. Allopathy and Ayurveda.

Unit-V: Antioxidants as markers for various disorder diseases. Medicinal plants as a source of Direct and indirect antioxidant activity.

References:

1. Handass., Kaul.M.K.,1996. Supplement to cultivation and utilization of medicinal plants. Regional research laboratory . Chapter 1, 2 & 5.
2. Colleen smith, Allan D., Marks. Lieberman., Basic medical biochemistry- a clinical approach. Second edition. 2005. Cippincott Williams and wilkings publishers 439 : 842.
3. Trivedi.P.C. Plant Biotechnology. Recent advances. 2000. Panima publishing corporation. 350
4. Irfen A.Khan. Atiya khanum . Role of Biotechnology in medicinal and Aromatic plants, volume II,First edition 1999. Ukaaz publications. 392.
5. Peter J.Lea. Richard.C.Leegood. Plant biochemistry and molecular biology, 2nd edition, 1999. John wiley and sons publication 2000.
6. Thoma M.Devlin. Textbook of Biochemistry with clinical correlations, 5th edition 2002 wiley – liss publications -480.
7. Geoffrey L. Zubay. Biochemistry. 4th edition,1998. WCB Mc Graw- Hill Publications. Chapter 17.
8. Gajera HP, Patel Sr. Gdakiya BA 2005. Antioxidant properties of some therapeutically active medicinal plants – an overview. Journal of medicinal and aromatic plant sciences. 27.91-100.
9. Seth SD, Bhawana Sharana. Medicinal Plants in India, Indian journal of medical research 120, July 2004,pp 9-11.
10. Buchanan, B.Gruissem. W.Jones.R.L. Biochemistry and Molecular biology of Plants. 1st edition. 2004. I.K. International .Pvt. Ltd. Chapter 24.

Course Duration: 36 Hours